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EXAMINER

ARANI, TAGHI T

ART UNIT

PAPER NUMBER

2131

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,736

Applicant(s)

GREWAL ET AL.

Examiner

Taghi T. Arani

Art Unit

2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 19-23 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 19-23 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/10/2006.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Taghi T. Arani
Primary Examiner
3/22/06

DETAILED ACTION

1. Claims 1-16, 19-23, 25-28 are examined and pending.

Response to Arguments

2. This Office action is responsive to Applicant's arguments filed on 1/27/2006.

Applicant's arguments with respect to claims 1-16, 19-23, 25-28 have been considered but are moot in view of the new ground (s) of rejection.

Claim Rejections - 35 USC 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 27-28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 27-28 are not limited to tangible embodiments. In view of applicant's disclosure, specification page 5, paragraph 0021, the computer readable medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g., computer system memory, optical disk, magnetic tape, magnetic disk) and intangible embodiments (e.g., a carrier wave modulated). As such, the claim is not limited to statutory subject matter and is therefore non-statutory

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 3-7, 9-16, 19-23, 25-26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record, D. Harkins, D. Carrel, "The Internet Key Exchange (IKE)", Request for Comments (2409) and further in view of US patent 6,842,860 to Branstad et al. (hereinafter "Branstad").

As per claims 1, 6, 23, 25 and 27, IKE (RFC 2409) discloses configuring a tunnel comprising [RFC 2409 discloses processes for implementing negotiating virtual private network (VPN) providing a remote user from a remote site access to a secure host or network see page 2, 2nd paragraph in Discussion]:

initiating, by a first peer, a negotiation with a second peer, the negotiation including a plurality of security configuration proposals [Page 3, section 3.2, SA or security association with one or more proposals which corresponds to plurality of security configuration proposals provided by an initiator for negotiation, see page 9, paragraph 6 wherein during security association negotiation, initiators present offers for potential security associations to responders, see also page 23, section 7.1 phase 1 using main mode];

sending, by the second peer, information to the first [page 24, in phase 1 using main mode, the responders selects (i.e. extracts), and returns one transform proposal];

extracting, by the first peer, a security configuration selected from among the plurality of security configuration proposals from the information sent by the second peer; and

establishing, using the security configuration, a tunnel between the first peer and the second peer [page 5, in Phase 2 where security associations are negotiated on behalf of service such as IPsec or any other service which needs key material and/or parameters negotiation. RFC 2409 describes that "Quick Mode" accomplishes a phase 2 exchange.

RFC 2409 is silent (as persuasively argued by the applicant) in disclosing wherein the first peer orders the plurality of security configuration proposals such that a security configuration proposal having a higher level of security is offered before a security configuration proposal having lesser level of security.

However, in an analogous art, Branstad discloses an adaptive cryptographically synchronized authentication system (ACSA) (Fig. 3 and associated text) implemented in accordance with open packages that implement the IPsec and Internet key exchange (IKE) security standards (col. 9, lines 24-30). Included in Branstad's ACSA system, the IKE module operating as the first peer orders the plurality of security configuration proposals such that a security configuration proposal having a higher level of security is offered before a security configuration proposal having lesser level of security [col. 11, line 50-67, i.e. SA payloads are proposed in the order of most secure to least secure, see also Fig. 8 and associated text].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the IKE protocol (RFC 2409) with the teachings of Branstad to have the first peer (i.e. initiator) to order the plurality of security configuration proposals such that a security configuration proposal having a higher level of security is offered before a security configuration proposal having lesser level of security with a motivation to provide a practical and flexible solution to high-speed network authentication (VPN) by dynamically selecting one of a plurality of security mechanisms based on factors such as available CPU utilization and overall strength-performance trade-off (Branstad, col. 1, lines 40-67).

As per claims 3, 7 and 26, IKE (RFC 2409) discloses wherein the establishing a tunnel includes conducting a phase2 negotiation in the IPSec protocol [page 5, in Phase 2 where security associations are negotiated on behalf of service such as IPsec or any other service which needs key material and/or parameters negotiation].

As per claims 4 and 5, IKE (RFC 2409) discloses initiating, by the first peer, a preliminary negotiation with the second peer,

wherein the initiating a preliminary negotiation includes conducting a phase 1 negotiation in the IPSec protocol [Phase 1 (or preliminary negotiation) where two ISAKMP peers establish a secure, authenticated channel with which to communicate (i.e. a security association, SA). RFC 2409 discloses that “ Main mode” and “ Aggressive Mode” each accomplish a phase one exchange].

As per claim 9, IKE (RFC 2409) discloses wherein the initiating comprises requesting, by the first peer, that the second peer send information, the information

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including policy information to define a subsequent negotiation between the first peer and the second peer [page 8, paragraph 6, i.e. Main mode is an instantiation of the ISAKMP Identity Protect Exchange].

As per claim 10, IKE (RFC 2409) discloses wherein the policy information defines one or more security associations [page 5, section 3.4, a Security association is a set of policy and keys used to protect information].

As per claim 11 and 15, IKE (RFC 2409) discloses wherein the information sent by the second peer comprises sets of attributes, the attributes including security parameters and network addresses [page 17, 4th and 6th paragraph, i.e. the identities of the SAs negotiated in Quick Mode are implicitly assumed to be the IP addresses of the ISAKMP peers (**recited in claim 15**), without any implied constraints on the protocol or port numbers allowed, unless client identifiers are specified in Quick Mode and all offers made during a Quick Mode are logically related and must be consistent. For example, if a KE payload is sent, the attribute describing the Diffie-Hellman group (see section 6.1 and [Pip97]) **MUST** be included in every transform of every proposal of every SA being negotiated. Similarly, if client identities are used, they **MUST** apply to every SA in the negotiation].

As per claim 12, 13 and 14, IKE (RFC 2409) discloses wherein the establishing a tunnel comprises negotiating, by the first peer with the second peer, to generate a secure key,

wherein the negotiating to generate a secure key includes conducting a phase2 negotiation in the IPSec protocol [page 8, section 5 discloses that there are two basic

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methods used to establish an authenticated key exchange: Main Mode and Aggressive Mode. Each generates authenticated keying material from an ephemeral Diffie-Hellman exchange. Main Mode MUST be implemented; Aggressive Mode SHOULD be implemented. In addition, Quick Mode (**recited in claim 14**) MUST be implemented as a mechanism to generate fresh keying material and negotiate non-ISAKMP security services].

As per claim 16, IKE (RFC 2409) discloses wherein a shared secret is stored on the first peer before the negotiation [page 16, . 5.4 Phase 1 Authenticated With a Pre-Shared Key].

As per claims 19-22, IKE (RFC 2409) discloses wherein the negotiation utilizes the base mode exchange extension of the IPSec protocol,

wherein the initiating a negotiation further comprises sending, by the first peer to the second peer, the identity of the first peer,

wherein the initiating a negotiation includes conducting a phase 1 negotiation in the IPSec protocol,

wherein the negotiation utilizes one of main mode and aggressive mode of the IPSec protocol [see page 16, section 5.4, Phase 1 Authenticated With a Pre-Shared Key for limitations recited in claims 19, 20, 21 and 22 disclosing a key derived by some out-of-band mechanism may also be used to authenticate the exchange. The actual establishment of this key is out of the scope of this document.

When doing a pre-shared key authentication, Main Mode is defined as follows:

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| Initiator | Responder |
|--------------------|------------------------|
| ----- | ----- |
| HDR, SA | --> |
| | <-- HDR, SA |
| HDR, KE, Ni | --> |
| | <-- HDR, KE, Nr |
| HDR*, IDii, HASH_I | --> |
| | <-- HDR*, IDir, HASH_R |

Aggressive mode with a pre-shared key is described as follows:

| Initiator | Responder |
|-----------------------|-----------------------------------|
| ----- | ----- |
| HDR, SA, KE, Ni, IDii | --> |
| | <-- HDR, SA, KE, Nr, IDir, HASH_R |
| HDR, HASH_I | -- |

When using pre-shared key authentication with Main Mode the key can only be identified by the IP address of the peers since HASH_I must be computed before the initiator has processed IDir. Aggressive Mode allows for a wider range of identifiers of the pre-shared secret to be used. In addition, Aggressive Mode allows two parties to maintain multiple, different pre-shared keys and identify the correct one for a particular exchange].

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5. Claims 2, 8, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record, D. Harkins, D. Carrel as applied in claims 1, 6, 23, 25 and 27 above and D. Dukes, R. Pereira, "ISAKMP Configuration Method", The Internet-Draft, March 2000 and further in view of Y. Dayan, S. Bitan, "IKE Base Mode", Internet-Draft, January 2000.

As per claims 2, 8, 26 and 28 The ISAKMP Configuration method (IDS#5, page 3 introduction) discloses a new ISAKMP configuration mode exchange extension of the IPSec protocol to allow IPsec-enabled entities to acquire and share configuration information (i.e. negotiation comprising a request/reply negotiation), D. Dukes, R. Pereira, page 11, section 7. That is, retrieving certain information from the other peer before the non-ISAKMP SA can be established is sometimes useful, Y. Dayan, S. Bitan, page 3, section 1].

Note: Examiner has pointed out particular references contained in the prior arts of record in the body of this action for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. Applicant should consider the entire prior art as applicable as to the limitations of the claims. It is respectfully requested from the applicant, in preparing the response, to consider fully the entire references as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior arts or disclosed by the examiner.

Conclusion

6. Prior arts made of record, not relied upon:

US 7,003,662 B2 to Genty et al.

US 6,976,177 B2 to Ahonen

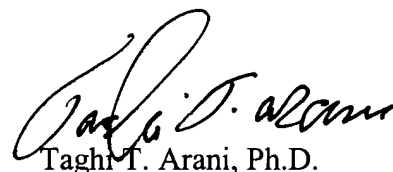
US 6,938,155 to D'Sa et al.

US 6,330,562 B1 to Boden et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taghi T. Arani whose telephone number is (571) 272-3787. The examiner can normally be reached on 8:00-5:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Taghi T. Arani, Ph.D.
Primary Examiner
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3/22/2006